

CLAIMS

1. Process for a radio communication system which is arranged for packet data transmission via at least one time-divided channel (Ch1) between a base station (BS) and mobile stations (MS1 - MS3), according to a message-synchronized ALOHA protocol with reservation, the mobile stations (MS1 - MS3) being arranged to send access requests to the base station (BS), which is arranged to receive and comply with access requests from at least a first mobile station (MS1) by sending thereto a channel reservation message (2) comprising a channel reservation (3), whereby time slots are reserved for packet data transmission between the first mobile station (MS1) and the base station (BS), and to receive access requests from a first group of mobile stations (MS2, MS3) for which channel reservation momentarily cannot be carried out, **characterized in that:**

- the reception of access requests from the first group of mobile stations (MS2, MS3) is confirmed in the form of an access confirmation (4, 5) from the base station (BS) to each of the mobile stations (MS2, MS3) included in the first group;
- these access confirmations (4, 5) are included in the channel reservation message (2) with the channel reservation (3) to the first mobile station (MS1);
- the first group in the radio communication system associated with the access confirmations are arranged in a queue, a queue position being allocated to each of the mobile stations in this group; and
- channel reservation is carried out for the mobile stations according to their queue positions.

2. Process according to Claim 1, **characterized in that:**

- the channel reservation message (2) is read by all the mobile stations from which access requests are received in the base station; and
- access confirmations (4, 5) included in this channel reservation message (2) are received in the mobile stations (MS2, MS3), whereby the latter are actuated so as to await channel reservation without making repeated access requests.

3. Process according to ^{claim 1} ~~either of the preceding claims~~, **characterized in that:**

- a first reference is supplied in the channel reservation (3) to the first mobile

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station, which first reference refers to a first time slot in the time-divided channel (Ch1), in which first time slot the access request from the first mobile station (MS1) was received in the base station (BS); and

- a second reference is supplied in each access confirmation (4, 5), which second reference refers to a second time slot in the time-divided channel (Ch1), in which second time slot access requests were received in the base station (BS) from the respective mobile station (MS2, MS3) for which the access confirmations are intended.

4. Process according to claim 3, **characterized in that:**

- the second reference is made up of the number of time slots between the first time slot and the second time slot.

5. Process in the case of a base station in a radio communication system which is arranged for packet data transmission, via at least one time-divided channel, between a base station and mobile stations, according to a message-synchronized ALOHA protocol with reservation, comprising the following steps:

- receiving access requests from the mobile stations;
- complying with the access request from at least a first mobile station by sending a channel reservation thereto, whereby time slots are reserved for packet data transmission between the first mobile station and the base station;
- giving access confirmations to each mobile station in a first group of mobile stations on receipt of access requests from the first group of mobile stations for which channel reservation momentarily cannot be carried out;
- sending these access confirmations in the same message as the channel reservation for the first mobile station;
- arranging, in association with the access confirmations, in the radio communication system a queue of the mobile stations in the first group, a queue position being allocated to each mobile station; and
- carrying out channel reservation for the mobile stations according to their queue positions.

6. Base station in a radio communication system, which is arranged for packet data transmission via at least one time-divided channel (Ch1) between the base

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station (BS) and mobile stations (MS1 - MS3), according to a message-synchronized ALOHA protocol with reservation, the mobile stations (MS1 - MS3) being arranged to send access requests to the base station (BS), which is arranged to receive and comply with access requests from at least a first mobile station (MS1) by sending thereto a channel reservation message (2) comprising a channel reservation (3), whereby a number of time slots are reserved for packet data transmission between the first mobile station (MS1) and the base station (BS), and to receive access requests from a first group of mobile stations (MS2, MS3) for which channel reservation momentarily cannot be carried out, **characterized in that:**

- the base station (BS) is arranged to give access confirmations (4, 5) to each of the mobile stations (MS2, MS3) which are included in the first group and from which access requests have been received;

- the base station (BS) is arranged to include these access confirmations in the same channel reservation message (2) as said channel reservation (3) for the first mobile station (MS1);

- the base station (BS) is adapted to arrange a queue of the mobile stations (MS2, MS3) in the first group, a queue position being allocated to each mobile station; and

- the base station is arranged to carry out channel reservation for the mobile stations in the first group according to their queue positions.

7. Mobile station in a radio communication system, which is arranged for packet data transmission via at least one time-divided channel (Ch1) between the base station (BS) and mobile stations (MS1 - MS3), according to a message-synchronized ALOHA protocol with reservation, the mobile stations being arranged to send access requests to the base station, which is arranged to receive and comply with access requests from at least a first mobile station (MS1) by sending thereto a channel reservation message (2) comprising a channel reservation (3), whereby time slots are reserved for packet data transmission between the first mobile station (MS1) and the base station (BS), and to receive the access requests from at least a second mobile station (MS2) for which channel reservation temporarily cannot be carried out, **characterized in that:**

- a mobile station (MS2) which has sent the access request to the base station

